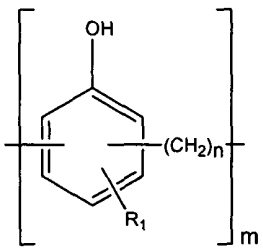
CLAIMS

1. A jet fuel composition comprising

(i) a jet fuel; and

(ii) a compound of Formula I



Formula I

wherein m is at least 1;

wherein n is 0 or 1;

wherein when m is 1, n is 0;

wherein the or each R_1 is a hydrocarbyl group with the proviso that the or each R_1 is free of carboxylic acid and carboxylic ester groups; and

wherein when m is 1, R_1 is a polymeric group comprising at least 12 carbon atoms.

2. A jet fuel composition according to claim 1 further comprising (iii) an antioxidant.

3. A jet fuel composition according to claim 1 or claim 2 further comprising (iv) a metal deactivator.

4. A jet fuel composition according to any one of claims 1, 2 or 3 wherein m is 1.

5. A jet fuel composition according to any one of the preceding claims wherein R_1 is a hydrocarbon group.

6. A jet fuel composition according to any one of the preceding claims wherein R_1 is a linear or branched alkyl group.

7. A jet fuel composition according to any one of the preceding claims wherein R_1 is a C_1-C_{200} group.

8. A jet fuel composition according to any one of the preceding claims wherein R_1 is a C_{10}-C_{200} group.

9. A jet fuel composition according to any one of the preceding claims wherein R_1 is a C_{40}-C_{180} group.

10. A jet fuel composition according to any one of the preceding claims wherein R_1 is a branched alkyl group.

11. A jet fuel composition according to any one of the preceding claims wherein R_1 is a polyalkenyl group.

12. A jet fuel composition according to any one of the preceding claims wherein R_1 is polyisobutene (PIB).

13. A jet fuel composition according to any one of the preceding claims wherein R_1 has a molecular weight of from 200 to 2500.

14. A jet fuel composition according to any one of the preceding claims wherein R_1 has a molecular weight of 500 to 2500.

15. A jet fuel composition according to any one of the preceding claims wherein R_1 has a molecular weight of approximately 750.

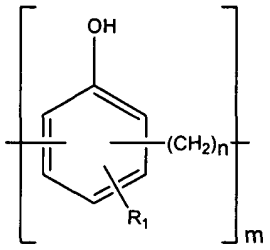
16. A jet fuel composition according to any one of the preceding claims wherein R_1 has a molecular weight of approximately 1000.

17. A jet fuel composition according to any one of the preceding claims wherein R_1 has a molecular weight of approximately 2300.

18. A jet fuel composition according to any one of the preceding claims comprising

(i) a jet fuel

(ii) a compound of Formula I



Formula I

wherein m is 1 and n is 0;

wherein R_1 is a polyisobutene with a molecular weight of from 200 to 2500;

(iii) an antioxidant; and

(iv) a metal deactivator.

19. A jet fuel composition according to any one of claims 1, 2 or 3 wherein m is greater than 1.

20. A jet fuel composition according to claim 19 wherein R_1 is a hydrocarbon group.

21. A jet fuel composition according to claim 19 or 20 wherein R_1 is a linear or branched alkyl group.

22. A jet fuel composition according to any one of claims 19 to 21 wherein R_1 is a C_1-C_{50} group.

23. A jet fuel composition according to any one of claims 19 to 22 wherein R_1 is a C_1-C_{25} group.

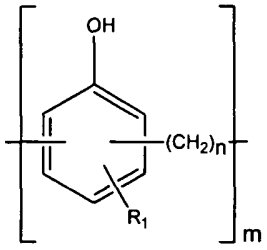
24. A jet fuel composition according to any one of claims 19 to 23 wherein R_1 is a C_5-C_{15} group.

25. A jet fuel composition according to any one of claims 19 to 24 wherein m is at least 4.

26. A jet fuel composition according to any one of claims 19 to 25 comprising

(i) a jet fuel

(ii) a compound of Formula I



Formula I

wherein m is greater than 1 and n is 1;

wherein each R_1 is a C_1-C_{50} hydrocarbyl group free of carboxylic acid and carboxylic ester groups.

(iii) an antioxidant; and

(iv) a metal deactivator.

27. A jet fuel composition according to any one of the preceding claims wherein R_1 is para substituted relative to the OH group.

28. A jet fuel composition according to any one of the preceding claims wherein the $(CH_2)_n$ group is ortho substituted relative to the OH group.

29. A jet fuel composition according to any one of claims 2 to 28 wherein the antioxidant is a hindered phenol antioxidant.

30. A jet fuel composition according to claim 29 wherein the antioxidant is 2,6-di-t-butyl-4-methyl phenol (BHT).

31. A jet fuel composition according to any one of claims 2 to 28 wherein the antioxidant is a phosphonate.

32. A jet fuel composition according to claim 31 wherein the antioxidant is dilauryl phosphonate.

33. A jet fuel composition according to any one of claims 3 to 32 wherein the metal deactivator is N,N'-disalicylidene 1,2-propanediamine.

34. A jet fuel composition according to any one of the preceding claims wherein the compound of Formula I is present in an amount of 50-200mg/L.

35. A jet fuel composition according to any one of the preceding claims wherein the compound of Formula I is present in an amount of 80-120mg/L.

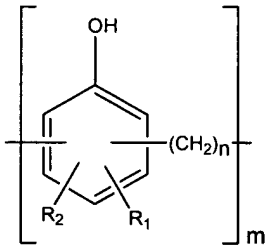
36. A jet fuel composition according to any one of claims 2 to 35 wherein the antioxidant is present in an amount of 1-50mg/L.

37. A jet fuel composition according to claim 36 wherein the antioxidant is present in an amount of 1-30mg/L.

38. A jet fuel composition according to any one of claims 3 to 37 wherein the metal deactivator is present in an amount of 0.05 – 10mg/L.

39. A jet fuel composition according to claim 38 wherein the metal deactivator is present in an amount of 0.5 – 5mg/L.

40. A jet fuel composition according to any one of the preceding claims wherein the compound of Formula I is a compound of Formula II



Formula II

wherein the or each R_2 is an optional hydrocarbyl group with the proviso that the or each R_2 is free of carboxylic acid and carboxylic ester groups; and wherein m, n and R_1 are as defined in any one of the preceding claims.

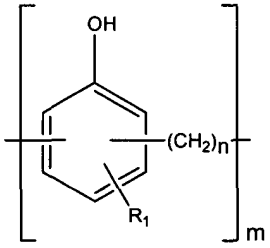
41. Use of a compound of Formula I as defined in any one of the preceding claims for the inhibition of oxidation of a jet fuel composition as defined in any one of the preceding claims.

42. Use of a compound of Formula I as defined in any one of the preceding claims for the inhibition of deposit formation in a jet fuel composition as defined in any one of the preceding claims.

43. Use of a compound of Formula I as defined in any one of the preceding claims for the inhibition of particulate formation from the oxidation product(s) of a jet fuel composition as defined in any one of the preceding claims.

44. Use of a compound of Formula I as defined in any one of the preceding claims for the solubilisation of deposits and/or deposit precursors in a jet fuel composition as defined in any one of the preceding claims.

45. A method for inhibiting deposit formation in a jet fuel at a temperature of from 100 to 335°C, the method comprising combining with the jet fuel a compound of Formula I



Formula I

wherein m is at least 1;
wherein n is 0 or 1;
wherein when m is 1, n is 0;
wherein the or each R_1 is a hydrocarbyl group with the proviso that the or each R_1 is free of carboxylic acid and carboxylic ester groups; and
wherein when m is 1, R_1 is a polymeric group comprising at least 12 carbon atoms.

46. A method according to claim 45 wherein the compound is as defined in any one of claims 2 to 40.

47. A jet fuel composition substantially as hereinbefore described with particular reference to any one of the Examples.

48. Use substantially as hereinbefore described with particular reference to any one of the Examples.

49. A method substantially as hereinbefore described with particular reference to any one of the Examples.